

CLAIMS:

What is claimed is:

1. A pressure equalization system for a submersible
5 pumping system, comprising:

a motor protector having a multi-orientable labyrinth
assembly comprising at least one conduit extending
back and forth in multiple directions to provide
operability in the multiple orientations, wherein
10 first and second ends of the at least one conduit
are configured for fluid coupling with a first
fluid and a second fluid, respectively.

2. The pressure equalization system of claim 1,
15 wherein the first fluid comprises an internal fluid of the
submersible pumping system and the second fluid comprises an
external fluid.

3. The pressure equalization system of claim 1,
20 wherein the multi-orientable labyrinth assembly comprises an
annular geometry configured for positioning
circumferentially about a motor-to-pump shaft assembly.

4. The pressure equalization system of claim 1,
25 wherein the multi-orientable labyrinth assembly is
configured for positioning adjacent a motor of the

submersible pumping system between the first and second fluids.

5 5. The pressure equalization system of claim 2,
further comprising a bellows assembly configured for
positioning between an internal motor fluid of the
submersible pumping system and the external fluid, wherein
the bellows assembly is formed by a material substantially
impermeable by the external fluid.

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6. The motor protector of claim 5, wherein the
bellows assembly positively pressurizes the internal fluid
relative to an external fluid.

15 7. The motor protector of claim 5, wherein the
bellows assembly is configured for positioning about a pump-
to-motor shaft assembly of the submersible pumping system.

20 8. A submersible pumping system, comprising:
a motor comprising an internal motor fluid;
a pump operatively coupled to the motor;
a motor protection assembly coupled to the
motor, comprising:
a multi-orientable labyrinth assembly comprising
25 at least one conduit extending back and forth in
multiple directions to provide operability in the

multiple orientations, wherein first and second ends of the at least one conduit are configured for fluid coupling with a first fluid and a second fluid, respectively.

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9. The pressure equalization system of claim 8, wherein the first fluid comprises an internal fluid of the submersible pumping system and the second fluid comprises an external fluid.

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10. The submersible pumping system of claim 8, wherein the multi-orientable labyrinth assembly comprises an annular geometry configured for positioning circumferentially about a shaft assembly extending between the motor and the pump.

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11. The submersible pumping system of claim 8, wherein the motor protection assembly comprises a bellows assembly configured for separating the first fluid from the second fluid.

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12. The motor protector of claim 11, wherein the bellows assembly positively pressurizes the first fluid relative to the second fluid.

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13. The motor protector of claim 11, wherein the bellows assembly is disposed about a pump-to-motor shaft

assembly and is coupled to an interior portion of the submersible pumping system without any sliding seals.

14. The submersible pumping system of claim 8, wherein
5 the motor protection assembly comprises a fluid absorbent assembly configured for removing an undesirable fluid from the internal motor fluid.

15 15. The submersible pumping system of claim 8, wherein the motor protection assembly comprises a particulate filter assembly.

16. A method for protecting a motor from undesirable fluids external to the motor, comprising:
15 coupling a first end of a conduit to the motor in fluid communication with an internal fluid of the motor;
extending the conduit back and forth in multiple orientations; and
fluidly coupling a second end of the conduit to the
20 undesirable fluids.

17. The method of claim 16, wherein extending the conduit back and forth comprises facilitating fluid separation between the internal and undesirable fluids in
25 each of the plurality of orientations.